

REMARKS/ARGUMENTS

In the Office Action mailed November 5, 2009, claims 1-10 were rejected. In response, Applicant hereby requests reconsideration of the application in view of the proposed amendments and the below-provided remarks. No claims are added or canceled. Applicants submit that the proposed amendments place the present application in condition for allowance or in better condition for appeal.

For reference, proposed amendments are presented for claims 1, 6, and 9. In particular, the proposed amendment for claim 1 is presented to recite forming a p-n junction above a drain region and between a body region and the drain region. This proposed amendment is supported by the original language of the claim. The proposed amendment for claim 6 is presented to provide consistency with the language of the specification. The proposed amendment for claim 9 is presented to maintain proper antecedent basis.

Interview Summary

Applicant expresses appreciation to the Examiner for allowing Applicant's representative a telephonic interview on January 4, 2010, and again on January 5, 2010, to discuss the claims of the present application. In general, several claims were discussed, and agreements were reached as follows.

In the interview, a proposed amendment (shown herein) for claim 1 was discussed. It was agreed that the proposed amendment for claim 1 will be entered because the amendment is based on the original language of the claim.

Additionally, claim 6 was discussed. The Examiner suggested that the term "trench etch window" be amended to "trench window" for consistency with the description in the specification. It was agreed that the proposed amendment (shown herein) will be entered to maintain consistency with the language of the description.

Additionally, claims 6 and 7 were discussed regarding support for the limitations related to depositing an epilayer of semiconductor doped to have a doping density lower than a doping density of a trench (found in claim 6, lines 5, and claim 7, lines 4-5).

Specifically, support for these limitations can be found on page 10, lines 8-12. This portion of the specification recites:

In a second embodiment of the invention, the substrate is first patterned to have a pattern across the surface before the trenches are formed. This may be done, for example, by simply implanting n-type dopant through the mask windows 8 before etching the trenches 10. This creates higher doped regions 90 between lower doped regions 92. The resulting pattern is illustrated in Figure 9. Subsequent processing carries on as in the first embodiment.
Specification, page 10, lines 8-12 (emphasis added).

Also, it should be noted that the original language of claim 5 refers to gate trenches (10) formed in higher-doped regions (90), and the original language of claim 6 (which depends on claim 5) refers to depositing an epilayer (4) of semiconductor doped to have a lower doping density. Fig. 9 is reproduced below to illustrate this relationship between the doping at the trenches (10) and the lower doping of the epilayer (4). In Fig. 9, the doping density of the regions (90) at the trench (10) are designated as "n," and the lower doping density of the epilayer (4) is designated as "n-." Applicant submits that this description, when taken in the context of the application as a whole and the language of the original claims, provides adequate support for the indicated language of claims 6 and 7.

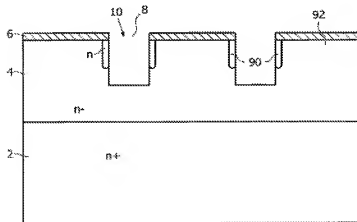


FIG. 9

Additionally, claim 9 was discussed. The Examiner suggested that the phrase “the gate of the gate trench” be amended for antecedent basis. It was agreed that the proposed amendment (shown herein) will be entered to maintain proper antecedent basis.

Additionally, the description in the specification at page 8, lines 20-24, was discussed. The Examiner indicated that the reference number “24” is not shown in the drawings. It was agreed that the proposed amendment (shown herein) to the specification will be entered to correct this issue.

Claim Rejections under 35 U.S.C. 112

Claims 1-10 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, claim 1 was rejected because the limitations of the claims were confusing. Specifically, the location of the p-n junction relative to the drain and body region was not clear. Claims 2-10 were also rejected for the same reasons because claims 2-10 depend from claim 1.

Applicant submits that the proposed amendment for claim 1 clarifies the limitations of the claim. As recited in the amended claim, the p-n junction is formed above a drain region and between the body region and the drain region. This description is consistent with the description and illustration of Fig. 2.

Accordingly, Applicant submits that claim 1 is amended to clarify the limitations of the claim and respectfully requests that the rejection of claim 1 under 35 U.S.C. 112, second paragraph, be withdrawn.

Dependent Claims

Claims 2-10 depend from and incorporate all of the limitations of independent claim 1. Applicant respectfully asserts claims 2-10 are allowable based on allowable base claims. Additionally, each of claims 2-10 may be allowable for further reasons.

CONCLUSION

Applicant respectfully requests reconsideration of the claims in view of the proposed amendments and the remarks made herein. A notice of allowance is earnestly solicited.

At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account **50-4019** pursuant to 37 C.F.R. 1.25. Additionally, please charge any fees to Deposit Account **50-4019** under 37 C.F.R. 1.16, 1.17, 1.19, 1.20 and 1.21.

Respectfully submitted,

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Date: January 5, 2010

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